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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

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Classification (Cancelled) (Changed to
By Authority of Joint Chiefs of Staff Action of 11 April 1949
By Adm. Staff Date 24 Apr 51
Int. P. Group

(6) OPERATION CROSSROADS.
U.S.S. ARDC 13.

TEST BAKER [U].

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By 12th U. APSWP Date 24 Apr 51

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Captain, U.S.N.

USS ARDC 13

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USS ARDC 13

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Flooding, drafts, list.

HULL

When the dock was inspected eight days after Test B, slow leakage was observed through cracks in the underwater body which had resulted from Test A. The rate of flooding was calculated to be approximately 30 percent of that which was observed before temporary repairs were affected after Test A. Two days later the dock capsized as the result of progressive flooding of the port side compartments. After capsizing the dock remained afloat with its starboard forward section above the surface of the water until the dock was sunk by charges on 6 August 1946.

(b) Structural damage.

HULL

During the brief inspection which was possible on this dock, no structural damage incident to Test B was observed. The cracks in the underwater body which were temporarily repaired between Tests A and B were apparently reopened.

MACHINERY

Not observed.

ELECTRICAL

See Hull report.

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(c) Other damage.

HULL

Not observed.

MACHINERY

None observed.

ELECTRICAL

It is apparent the damage caused by Test A was not increased as a result of Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

(b) Fires and explosions.

HULL

None.

MACHINERY

None.

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ELECTRICAL

None.

(c) Shock.

HULL

None observed.

MACHINERY

None observed.

ELECTRICAL

None observed.

(d) Pressure.

HULL

None observed.

MACHINERY

None observed.

ELECTROCAL

None observed.

(e) Any effects noted peculiar to the atom bomb.

HULL

Only effects noted peculiar to the atom bomb were radio-activity and wave phenomena.

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MACHINERY

None.

ELECTRICAL

None other than radioactivity and wave phenomena.

III. Results of Test on Target.

(a) Effect on propulsion and ship control.

HULL

Not applicable.

MACHINERY

Test B had no apparent effect on machinery of this vessel as far as could be determined by visual inspection.

ELECTRICAL

None.

(b) Effect on gunnery and fire control.

HULL

Not applicable.

MACHINERY

Not applicable.

ELECTRICAL

Not applicable.

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(c) Effect on watertight integrity and stability.

HULL

This dock capsized as the result of progressive flooding of port side compartments and ultimate loss of stability. However, the flooding which occurred was through a leak which was incurred incident to Test A. The rate of leakage was well within the capacity of the pumping equipment installed.

MACHINERY

No comment.

ELECTRICAL

No comment.

(d) Effect on personnel and habitability.

HULL

Except for the effects of radioactivity, it is considered that personnel and habitability would not have been affected by the test.

MACHINERY

None other than the effects of radioactivity.

ELECTRICAL

Except for the effects of radioactivity it is considered that personnel and habitability would not have been affected.

(e) Total effect on fighting efficiency.

HULL

The longitudinal strength, buoyancy, stability, watertight integrity, and seaworthiness of the vessel and the operability of

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equipment and machinery apparently were not affected by Test B. This dock was lost as the result of leaving a leaking structure un-manned and untended over a period of time.

MACHINERY

The equipment and machinery of this vessel were not affected by Test B.

ELECTRICAL

There was no apparent damage to the electrical equipment which would impair the operation of this drydock.

IV. General Summary of Observers' Impressions and Conclusions.

HULL

No comment. Additional information on this dock is contained in the Bureau of Yards and Docks Report.

MACHINERY

No comment.

ELECTRICAL

No comment.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

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TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Flooding, drafts, list.

When the dock was inspected eight days after Test B, slow leakage was observed through cracks in the underwater body which had resulted from Test A. The rate of flooding was calculated to be approximately 30 percent of that which was observed before temporary repairs were effected after Test A. Two days later the dock capsized as the result of progressive flooding of the port side compartments. After capsizing the dock remained afloat with its starboard forward section above the surface of the water until the dock was sunk by demolition charges on 6 August 1946.

(b) Structural damage.

During the brief inspection which was possible on this dock, no structural damage incident to Test B was observed. The cracks in the underwater body which were temporarily repaired between Tests A and B were apparently reopened.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

None.

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(b) Fires and explosions.

None.

(c) Shock.

None observed.

(d) Pressure.

None observed.

(e) Any effects noted peculiar to the atom bomb.

Only effects noted peculiar to the atom bomb were radioactivity and wave phenomena.

III. Results of Test on Target.

(a) Effect on propulsion and ship control.

Not applicable.

(b) Effect on gunnery and fire control.

Not applicable.

(c) Effect on watertight integrity and stability.

This dock capsized as the result of progressive flooding of port side compartments and ultimate loss of stability. However the flooding which occurred was through a leak which was incurred incident to Test A. The rate of leakage was well within the capacity of the pumping equipment installed.

(d) Effect on personnel and habitability.

Except for the effects of radioactivity, it is considered that personnel and habitability would not have been affected by the test.

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(e) Total effect on fighting efficiency.

The longitudinal strength, buoyancy, stability, water-tight integrity, and seaworthiness of the vessel and the operability of equipment and machinery apparently were not affected by Test B. This dock was lost as the result of leaving a leaking structure unmanned and untended over a period of time.

IV. General Summary of Observers' Impressions and Conclusions.

No comment. Additional information on this dock is contained in the Bureau of Yards and Docks Report.

V. Preliminary Recommendations.

None.

VI. Instructions for loading the vessel imposed no restrictions.

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

Apparently the crack in the port side just below the waterline, which was repaired between Tests A and B, was reopened. No other hull damage is observed. General views of the dock before and after test are on pages to .

B. Superstructure.

No damage observed.

C. Turrets, Guns, and Directors.

Not applicable.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

No damage observed.

F. Exterior Hull.

No damage observed.

G. Interior Compartments (above w.l.).

No damage observed.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

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I. Interior Compartments (below w.l.).

No damage observed.

J. Underwater Hull.

The temporary repair made to the crack in the port side apparently reopened and permitted flooding of the port compartments. No other damage was observed.

K. Tanks.

Not inspected.

L. Flooding.

Flooding occurred through a crack in the underwater hull, port. This crack was sustained incident to Test A and was temporarily repaired before Test B. The rate of leakage was calculated to be about 30 percent of that which was observed before the crack was repaired. It was well within the capacity of the ship's normal pumping facilities. However, it was sufficient to cause the untended dock to capsize after a period of about ten days.

M. Ventilation.

No damage observed.

N. Ship Control.

Not applicable.

O. Fire Control.

Not applicable.

P. Ammunition Behavior.

Not applicable.

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Q. Ammunition Handling.

Not applicable.

R. Strength.

No damage observed.

S. Miscellaneous.

No comment.

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

- (b) Structural damage.

None observed.

- (c) Other damage.

None observed.

II. Forces evidenced and Effects Noted.

- (a) Heat.

None.

- (b) Fires and explosions.

None.

- (c) Shock.

None observed.

- (d) Pressure.

None observed.

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- (e) Any effects peculiar to the Atom Bomb.

None.

III. Results of Test on Target.

- (a) Effects on machinery.

Test "B" had no apparent effect on machinery of this vessel as far as could be determined by visual inspection.

- (b) Effect on gunnery and fire control.

Not applicable.

- (c) Effect on water-tight integrity and stability.

This dock capsized as the result of progressive flooding. This flooding could have been controlled had the crew been aboard.

- (d) Effect on personnel and habitability.

None other than the effects of radioactivity.

- (e) Total effect on fighting efficiency.

The equipment and machinery of this vessel were not affected by Test "B".

IV. General Summary of Observers' Impressions and Conclusions.

No comment.

V. Preliminary Recommendations.

None.

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DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

Test "B" had no effect on machinery of this vessel as far as could be determined by visual inspection.

(b) Areas of major damage.

None.

(c) Primary cause of damage.

Not applicable.

(d) Effect of target test on overall operation of machinery plant.

Test "B" had no effect on the machinery of this vessel.

B. Boilers.

Not applicable.

C. Blowers.

Not applicable.

D. Fuel oil Equipment.

No damage noted by visual inspection.

E. Boiler Feedwater Equipment.

Not applicable.

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F. Main Propulsion.

Not applicable.

G. Reduction Gears.

Not applicable.

H. Shafting and Bearings.

Not applicable.

I. Lubrication System.

Not applicable.

J. Condensers and Air Ejectors.

Not applicable.

K. Pumps.

The circulating and fuel oil pumps are not damaged. The two fresh water and two salt water pumps which suffered salt water immersion from flooding incident to Test "A", received no further damage as the result of Test "B".

L. Auxiliary Generators.

Not applicable.

M. Propellers.

Not applicable.

N. Distilling Plant.

Not applicable.

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O. Refrigeration Plant.

No apparent damage from Test "B".

P. Winches, Windlasses, and Capstans.

One anchor winch is installed, it received no damage from Test "B".

Q. Steering Engine.

Not applicable.

R. Elevators, etc.

Not applicable.

S. Ventilation.

No damage.

T. Air Compressors.

The two air compressors installed in the port wing, C deck received no apparent damage from Test "B".

U. Diesels.

The two diesel engines installed in the starboard wing, C deck, received no apparent damage.

V. Piping.

No damage to any piping from Test "B". Various valves and fittings are missing.

W. Miscellaneous.

The laundry machine and drinking fountain received no apparent damage from Test "B".

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TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

Not observed.

- (b) Structural damage.

See Hull report.

- (c) Other damage.

It is apparent the damage caused by test "A" was not increased as a result of test "B".

II. Forces Evidenced and Effects Noted.

- (a) Heat.

None.

- (b) Fires and explosions.

None.

- (c) Shock.

None observed.

- (d) Pressure.

None observed.

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- (e) Any effects apparently peculiar to the Atom Bomb.

None other than radioactivity and wave phenomend.

III. Effect of Damage.

- (a) Effect on electrical and docking control.

None.

- (b) Effect on gunnery and fire control.

Not applicable.

- (c) Effect on watertight integrity and stability.

This dock capsized as a result of progressive flooding of port side compartment and ultimate loss of stability. However the flooding which occurred was through a leak which incurred incident to test "A".

- (d) Effect on personnel and habitability.

Except for the effect of radioactivity, it is considered that personnel and habitability would not have been affected.

- (e) Total effect on fighting efficiency.

There was no apparent damage to electrical equipment which would impair the operation of this drydock.

IV. General Summary of Observers' Impressions and Conclusions.

No comment.

V. Recommendations.

None.

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DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

There was no apparent change of the condition of electrical equipment as a result of this test.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

None.

(d) Effect on target test on overall operation of electrical plant.

None.

(e) Types of equipment most affected.

None.

B and C.

Not applicable.

D.

No damage.

E.

Not applicable.

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F. to H Inclusive.

No damage.

I.

Not applicable.

J. to M. Inclusive.

No damage.

N. to U. Inclusive.

Not applicable.

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SECTION IV

PHOTOGRAPHS

TEST BAKER

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BB-CR-227-519-120. View from ahead before Test B.

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AB-CR-227-289-114. View from ahead after Test B.

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BB-CR-227-519-113. View from ahead before Test B.

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AB-CR-227-289-115. View from off port bow after Test B.

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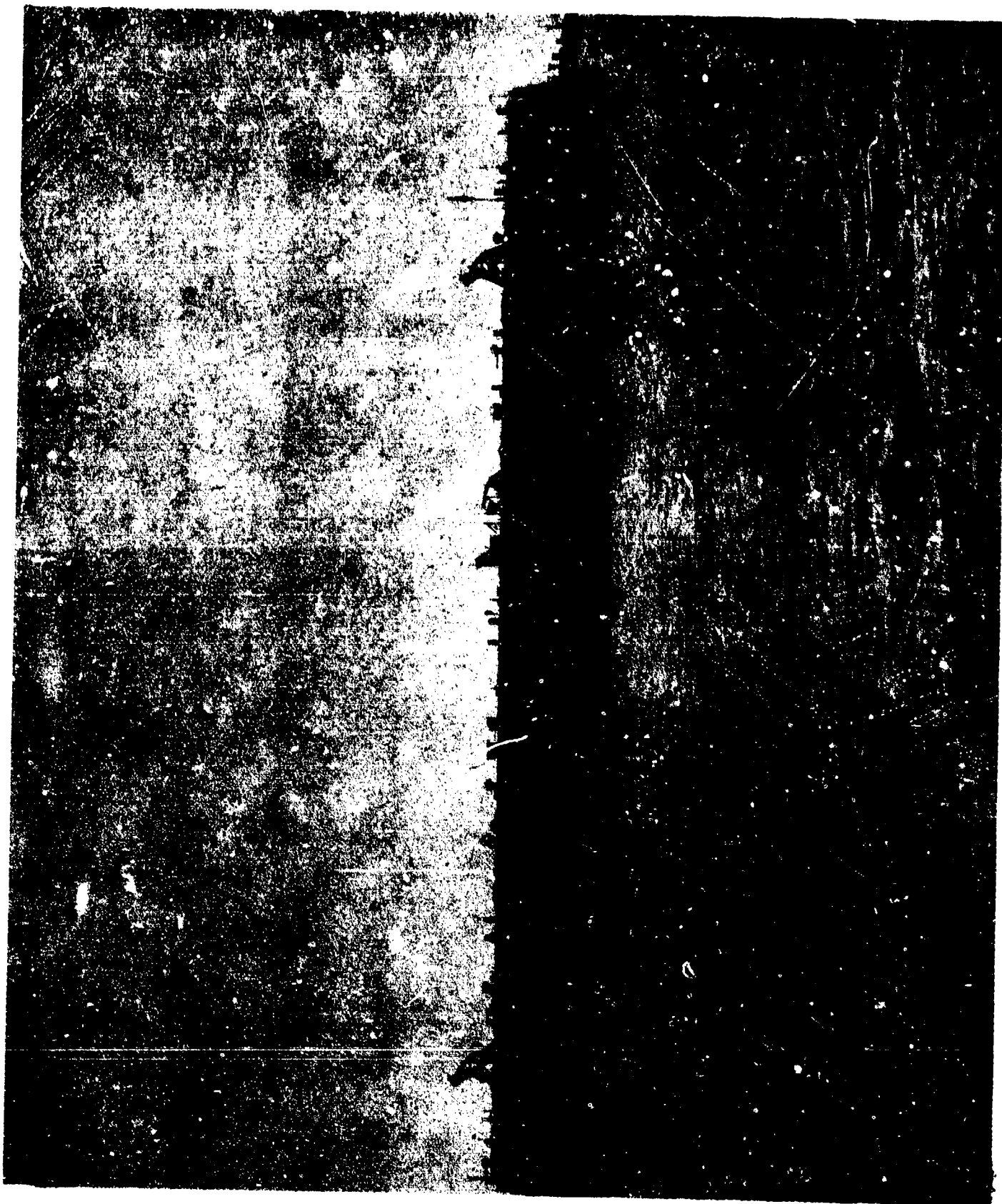
BB-CR-227-519-114. View from off port beam before Test B.

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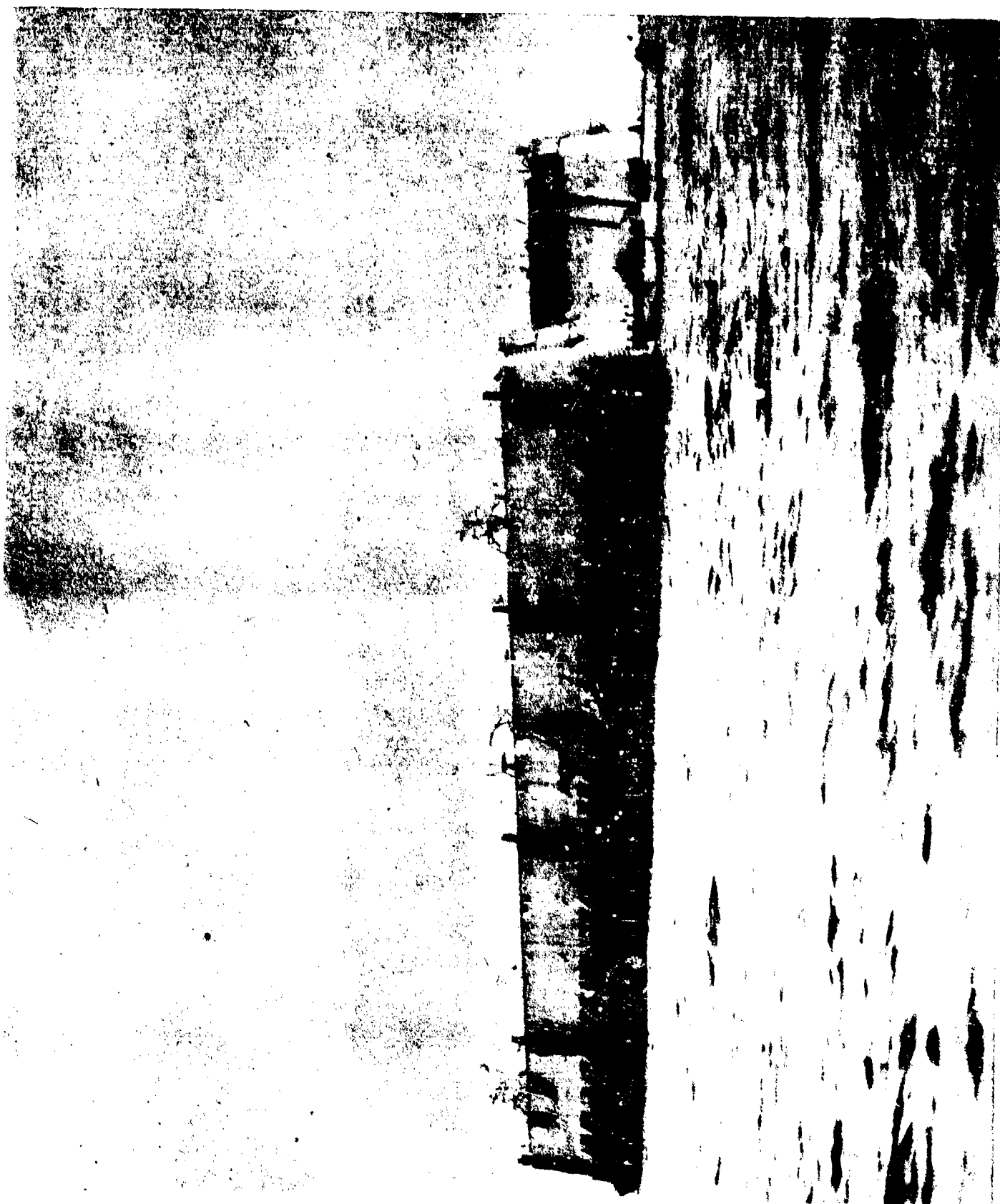
AB-CR-227-289-116. View from off port beam after Test B.

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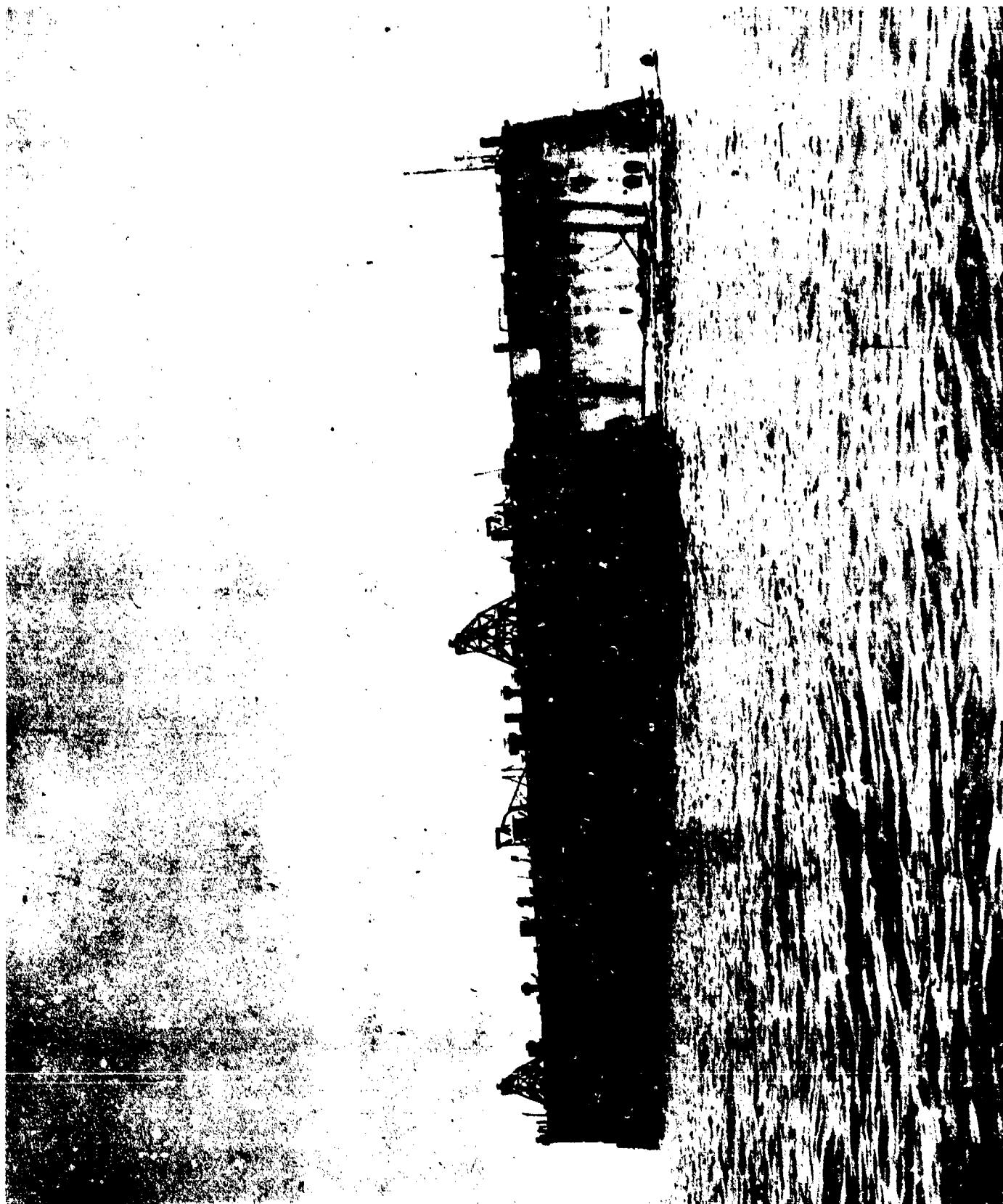
BB-CR-227-519-115. View from off port quarter before Test B.

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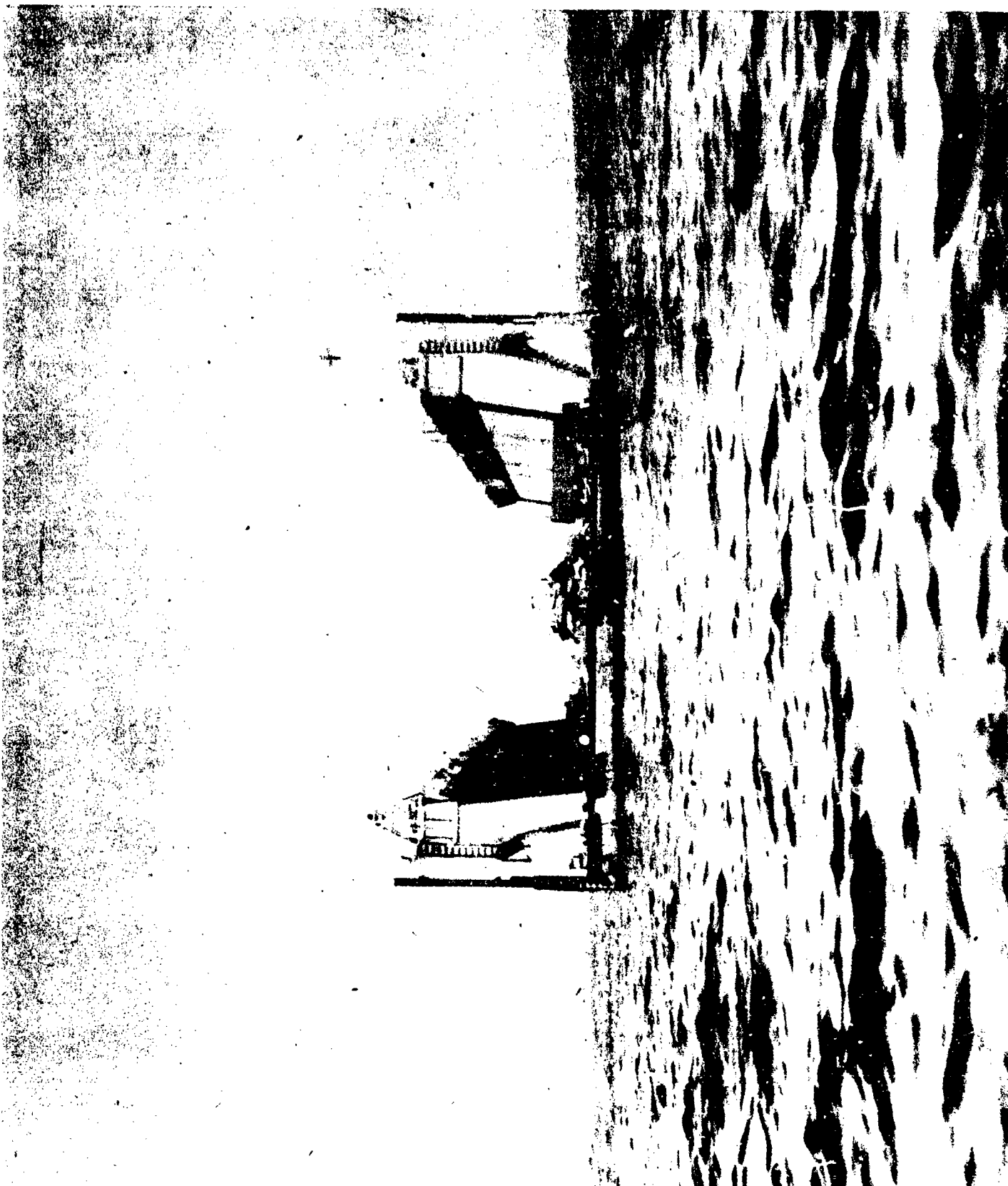
AB-CR-227-289-117. View from off port quarter after Test B.

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BB-CR-227-519-116. View from astern before Test B.

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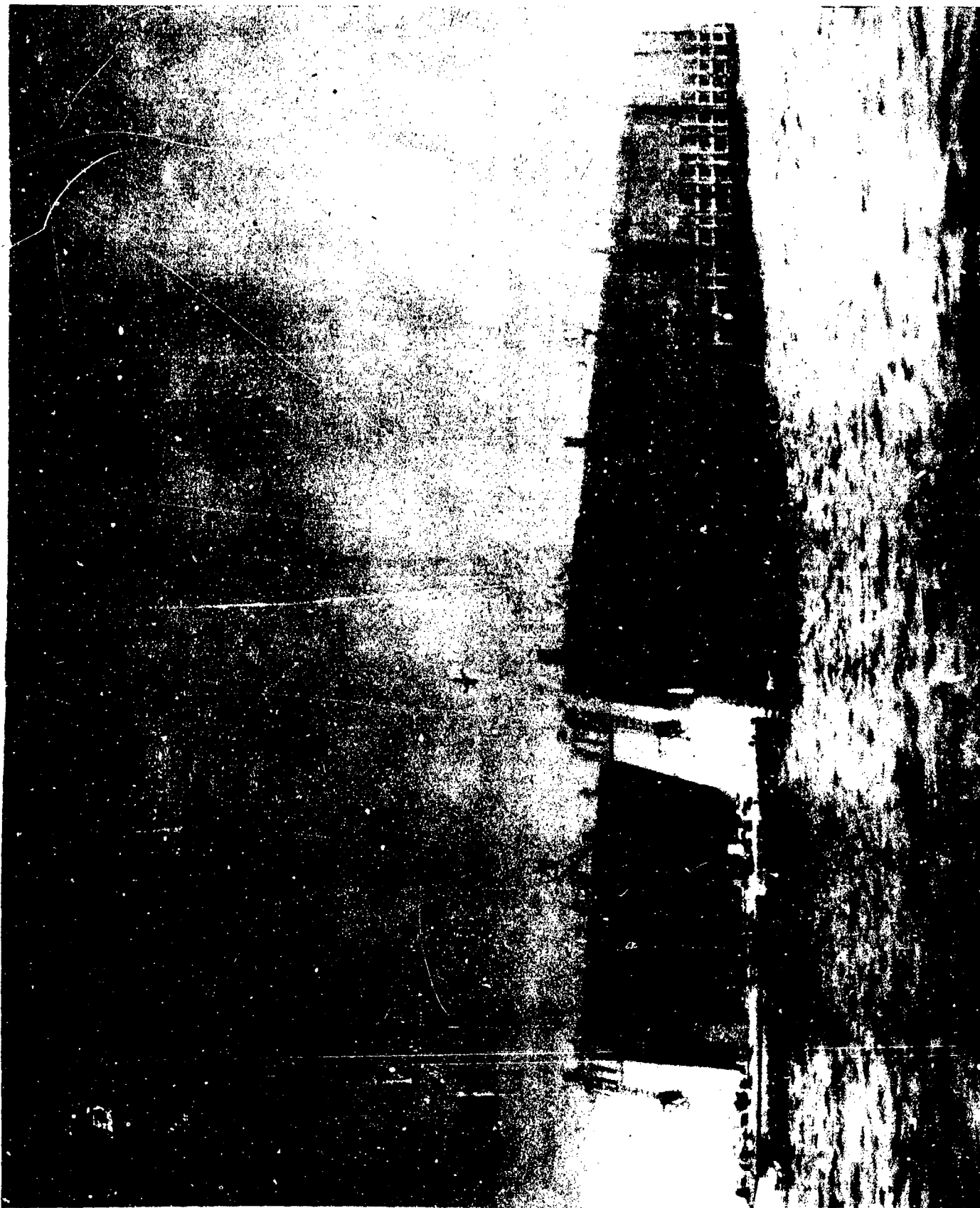
AB-CR-237-289-118. View from astern after Test B.

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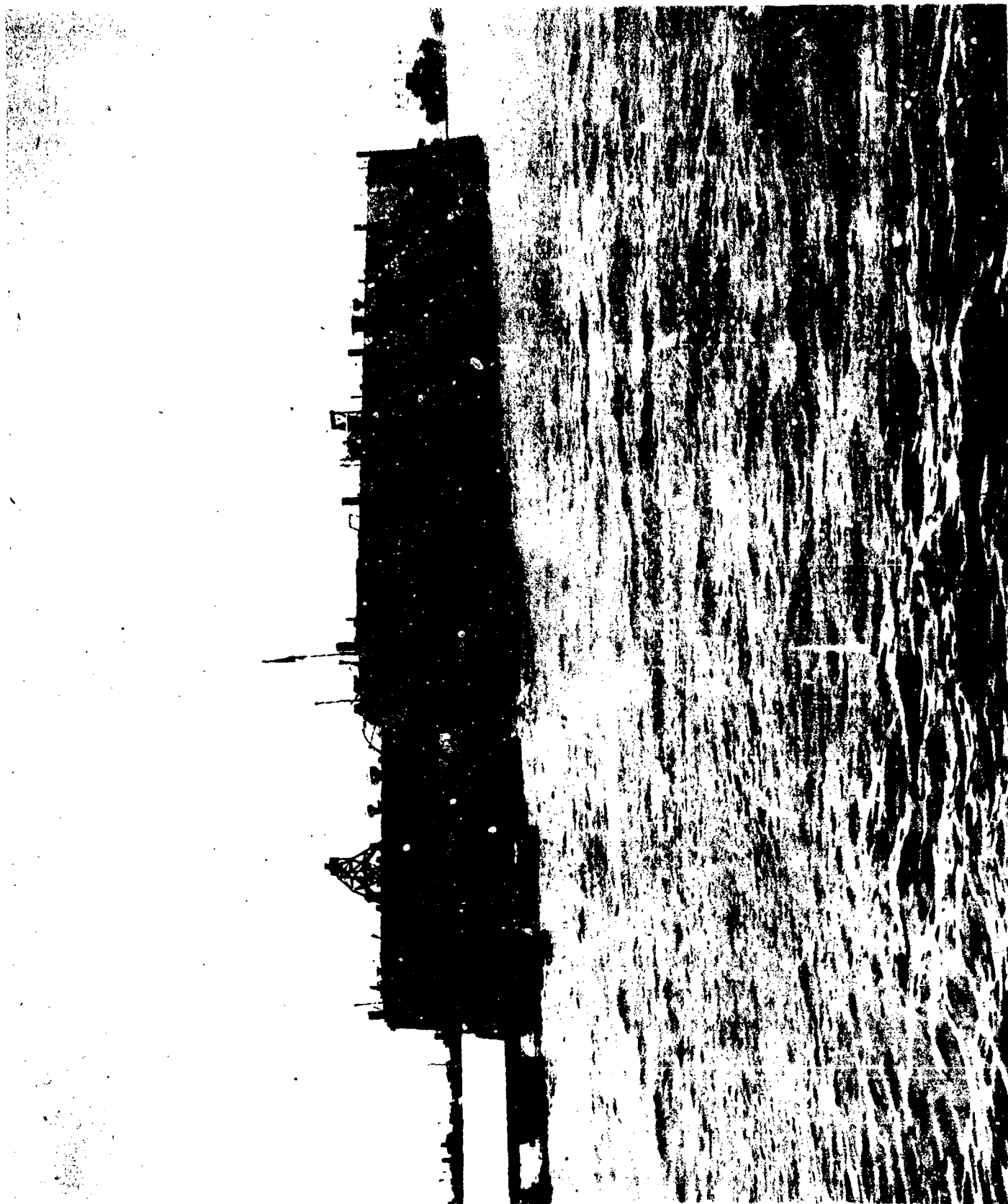
BB-CR-227-519-117. View from off starboard quarter before Test B.

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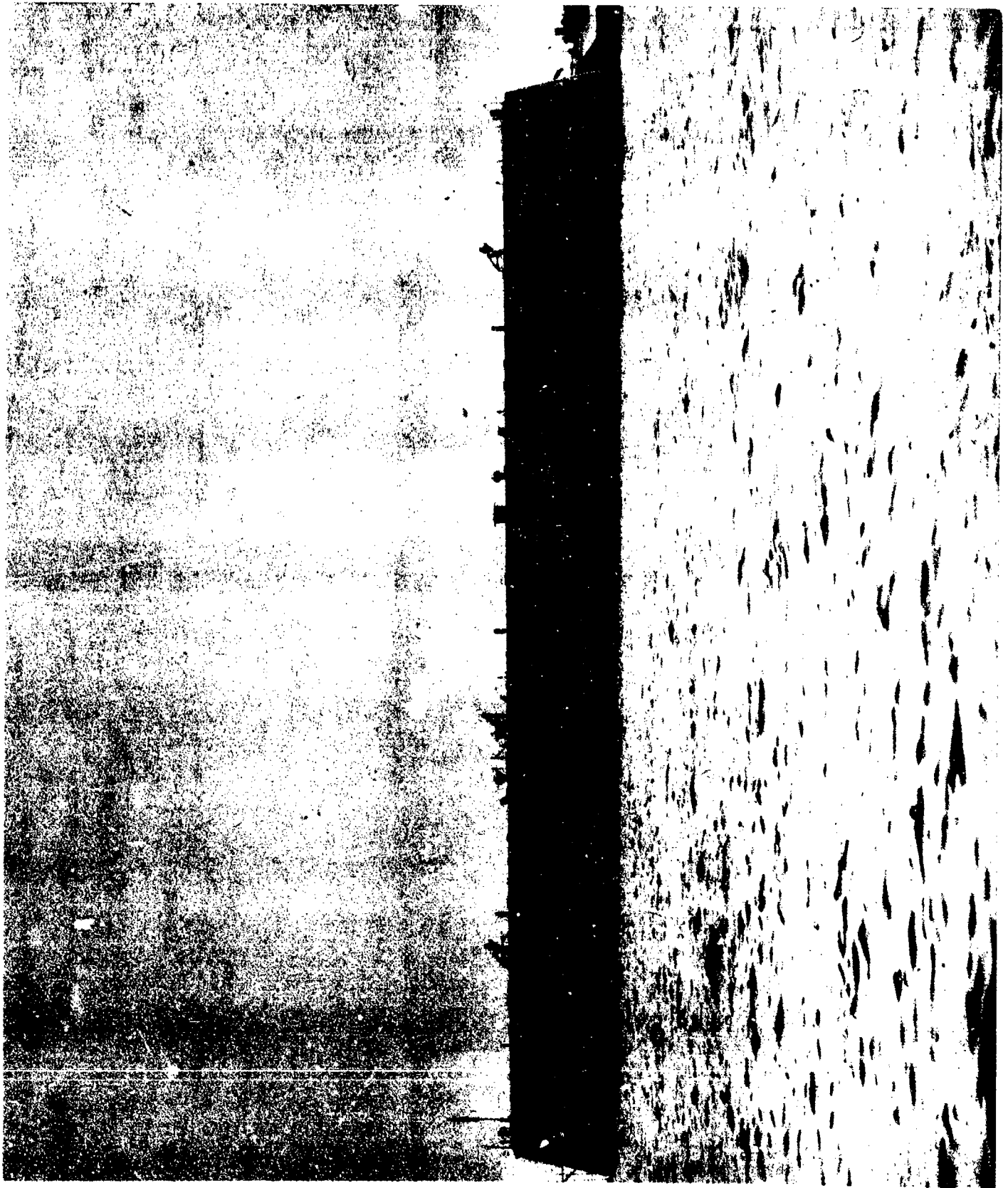
AB-CR-227-289-119. View from off starboard quarter after Test B.

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AB-CR-227-289-120. View from off starboard beam after Test B.

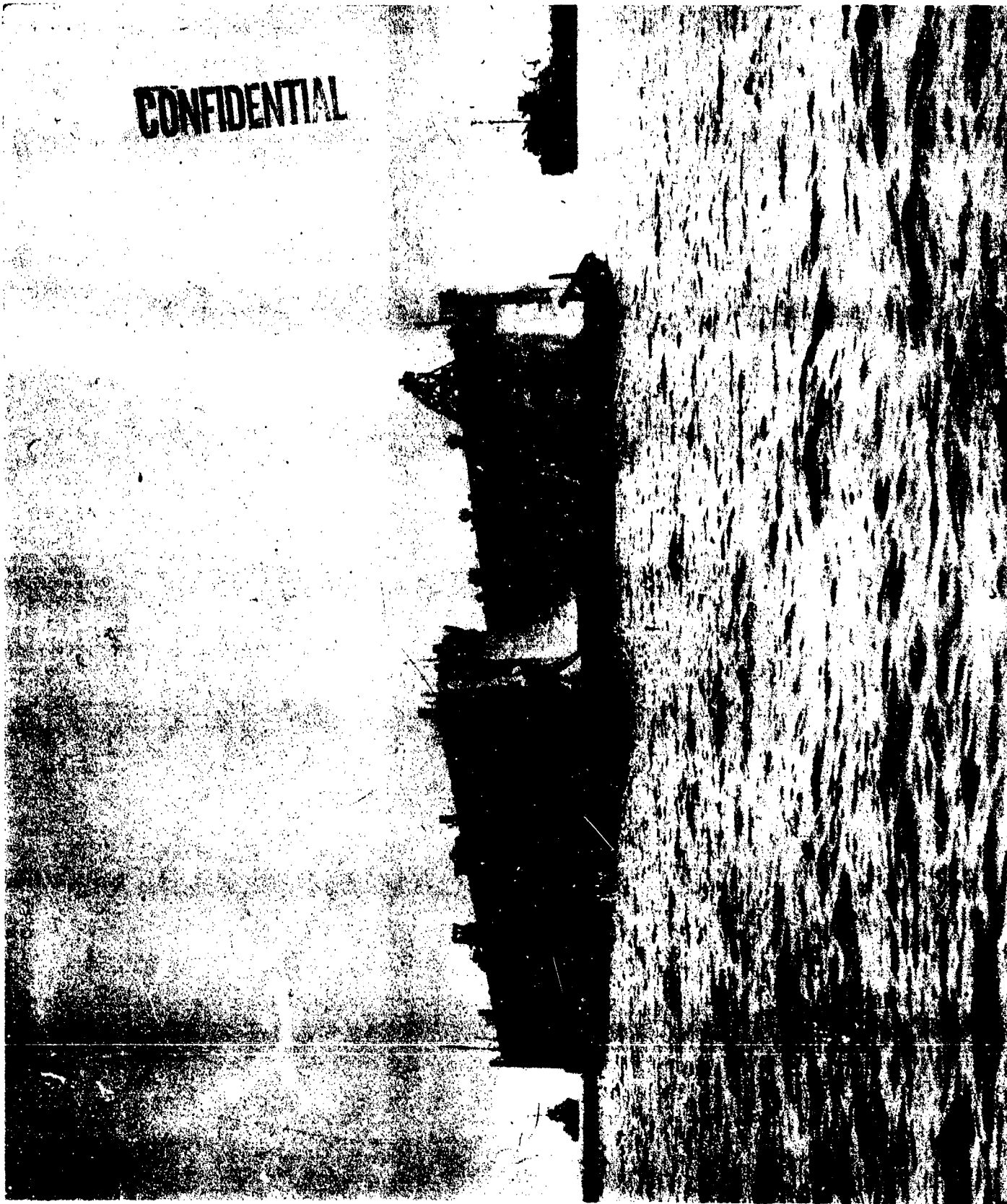
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AB-CR-227-289-121. View from off starboard bow after Test B.

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Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

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18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

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x ——— AD-366589 4	XRD-200-Section 9✓
AD-366590 4	XRD-204-Section 13✓
AD-366591 4	XRD-183✓
/✓AD-366586 4	XRD-201-Section 10✓
✓✓AD-367487 4	XRD-131-Volume 2✓
✓✓AD-367516 4	XRD- 13 143✓
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AD-801410L✓	XRD-138✓
AD-376831L✓	XRD-83✓
AD-366759 4	XRD-80✓
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✓AD-367478 H	XRD-122 ✓
✓AD-367481 X	XRD-125 ✓
AD-367500 V	XRD-159-Volume
✓AD-367499 H	XRD-160-Volume 3 ✓
✓AD-367498 X	XRD-161-Volume 4 ✓
AD-367512 ✓	XRD-147 ✓
AD-367511 ✓	XRD-148 ✓
✓AD-367465 X	XRD-107 ✓
AD-366733 ✓	XRD-43 ✓
✓AD-367477 X	XRD-121 ✓
✓AD-367476 H	XRD-120 ✓
✓AD-367467 X	XRD-109-Volume 1 ✓
✓AD-367475 H	XRD-119 ✓
✓AD-367474 X	XRD-118 ✓
✓AD-367473 H	XRD-117 ✓
✓AD-367472 H	XRD-116 ✓
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Arldith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center